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## SOFT WHEAT GRAIN VARIETY TESTS AT OVERTON FOR 1990-91 AND 3-YEAR MEANS

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**Background.** Wheat grain variety trials are planted at Overton annually. Purpose of these trials is to determine grain yield potential, adaptability, winterhardiness, and disease resistance of released varieties as well as experimental soft red winter wheat lines. High moisture conditions in East Texas are favorable for several fungus diseases which often attack wheat. Therefore, Overton is an excellent location to evaluate wheat for resistance to leaf rust, powdery mildew, septoria glume blotch, etc.

**Research Findings.** Soft wheat tests were planted on prepared seedbeds. The soil in 1990-91 was a well-drained, loamy sand. The fertilizer and management practices are in Table 1. The 1990-91 growing season was extremely wet and favored disease buildup of several wet weather diseases. Grain yields were below average (Table 1). The highest yielding lines were experimental lines FL 8172-G98-L5, and TX89D2152. The higher yielding varieties were FL 302, Terral-101, Gore, Coker 9766, Terral-877, Saluda, and McNair 10-03 followed closely by several other lines. A 3-year mean yield is presented for those varieties tested the past 3 years. The highest yielding variety over the three years was Pioneer 2548, which averaged 51 bu/ac. Gore, a variety released in Georgia averaged 49 bu/ac. Test weight of wheat should be 60 lb/bu. Test weights were very low in 1991 due to premature death of the plants which was caused by the septoria glume blotch disease complex. This disease was extremely severe and reduced grain yields by 50% or more in 1991. Most of the soft red winter wheat varieties have some resistance, however, high levels of resistance to septoria diseases are not available. Hard red winter wheat varieties are quite susceptible to the septoria diseases and do not normally produce high yields in high rainfall areas, such as East Texas. Leaf rust disease levels were very low and are not shown in table 1. No winterkill occurred in this test. Powdery mildew disease ratings were also low, however several lines demonstrated susceptibility. Lodging was quite low except for Caldwell.

**Application.** These data should be useful in determining which varieties have best potential for grain yield, and disease resistance in northeast Texas. Wheat grain yields were low in 1991, due to the wet growing conditions. Higher wheat yields can be expected in drier years, as indicated by the 3-year means. Other wheat grain yield data from variety tests at Dekalb and Mount Pleasant are presented elsewhere in this field day report.

Table 1. Elite Soft Wheat Grain Variety Test, Overton, Texas 1990-91 and 3 year mean

Variety	Yield	3 Yr Mean	Test Weight	Height	Heading Date	Lodging	Powdery Mildew	Septoria Glume Blotch
	-----bu/ac-----		lbs/bu	inches		%		
FL 8172-G98-L5	36.0	--	55	27	4-2	0	0*	6*
TX-89D2152	34.4	--	52	30	4-4	0	0	6
FL 302	32.9	35	52	30	4-2	0	0	5
Terral-101	32.6	--	47	30	4-6	0	0	6
Gore	32.1	49	51	29	4-2	0	0	6
TX-83-50	31.0	33	50	27	4-2	0	0	8
Coker 9766	31.0	--	52	25	4-3	0	0	7
TX-76-40-2	30.8	35	46	28	4-4	0	0	6
Terral-877	30.7	--	52	30	4-1	0	0	6
Saluda	30.6	41	51	25	4-8	0	0	5
TX-82-185	29.7	30	52	27	4-3	0	0	6
McNair 10-03	28.7	43	46	29	4-1	0	0	6
TX-89D2146	27.9	--	42	29	4-6	0	0	7
TX-89D2148	27.7	--	48	25	4-10	0	0	7
Magnum	27.3	--	52	25	4-4	0	0	6
Ark 26415	27.1	--	49	31	4-7	0	3	5
TX-83-70	26.9	--	47	28	4-4	0	0	6
Fla 303	26.8	17	55	26	3-28	0	0	7
Bradford	26.3	37	52	29	4-7	15	0	7
TX-89D2143	26.2	--	45	30	4-8	10	0	6
Pioneer 2548	25.9	51	44	25	4-7	0	0*	6*
Coker 68-15	25.6	--	54	28	4-7	3	4	7
TX-82-118	25.6	41	49	26	4-6	0	0	8
TX-85-264	24.7	35	45	28	4-4	0	0	7
TX-83-4-2	23.2	--	48	32	4-11	0	0	5
TX-89D9613	22.8	--	50	29	4-3	0	0	8
Fla 301 H	22.5	12	51	28	3-27	0	0	8
DK 80	22.2	--	50	25	4-3	0	0	8
TX-89D9625	21.1	--	50	24	4-9	5	1	7
TX-85-121-2	20.6	--	46	31	4-12	0	0	7
TX- 80-31-3	20.1	30	44	28	4-8	10	0	8
TX-89D2167	20.1	--	40	29	4-10	0	0	8
TX-82-50-1	20.1	--	41	31	4-10	0	0	8
TX-88D3581	18.8	--	42	27	4-10	0	0	8
TX-88D3193	17.8	--	48	37	4-19	0	4	4
TX-89D9590	17.6	--	42	24	4-10	0	0	9
Pioneer 2551	16.2	--	38	27	4-10	0	0	6
Caldwell	10.4	33	30	24	4-12	30	2	8
Mean	25.6	--	46	28	--	2	1	7
LSD	4.6	--	--	--	--	--	--	--
CV	12.9	--	--	--	--	--	--	--

Planted on October 16, 1990. Harvested on May 21, 1991. Fertilizer application rate: Preplant 50 lbs of N, 100 lbs of P<sub>2</sub>O<sub>5</sub> and 100 lbs of K<sub>2</sub>O/a. Topdressed with 20 lbs of N, 40 lbs of P<sub>2</sub>O<sub>5</sub> and 40 lbs of K<sub>2</sub>O on Nov. 27. There were 30 lbs of N applied on Feb. 14 along with 20 lbs on March 18, both applications were as ammonium nitrate.

\*Disease ratings were on a scale of 0 to 9, where 0 = no disease and 9 = was severely diseased.